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(54) Title: SYSTEM AND METHOD FOR SHORT NOTICE ADVERTISING PLACEMENT

(57) Abstract: A system and method for utilizing dynamic advertisement placements is disclosed. Information such as an available advertising placement and a cost for purchasing the placement is stored in a database. The database is accessible to a number of advertising buyers. The buyers submit bids for the available advertising placement. The system selects a bid for each available advertising placement and identifies a buyer associated with the selected bid. This buyer is notified of the advertising placement being reserved and assigned.

**SYSTEM AND METHOD FOR SHORT NOTICE ADVERTISING PLACEMENT****Background of the Invention****Field of the Invention**

5 The present invention relates to a system and method for mapping advertising spots to video content and the dynamic placement of advertisements on short notice. Particularly, it relates to a system and method for the statistical selection of content-driven ad avail. buying, and selling, of mapped advertising spots and electronically transporting the video advertising content through any private or public network such as, Internet, and like network services.

**10 Related Art**

15 The cable advertising market is presently undervalued in comparison to off-air broadcast advertising. Difficulties of cable networks in providing advertisers the ratings (viewership) similar to national broadcast networks stem from two basic elements. Broadcast TV has an entrenched position with viewers because of programming quality, accessibility, and a long market position. In addition, available ad time is shared between the cable satellite programmers and cable system operators. This shared market creates some technological difficulties, which are problematic for selling ad time on cable networks. These issues leave millions of cable Ad-spots under valued and unsold each day.

20 Cable is experiencing an explosion of technological advances. Video compression allows cable operators to expand channel capacity. Consumers can choose from 100 plus channels and are essentially programming their own viewing. Competitive satellite technology has improved with the launching of DBS and MMDS multi-channel technology. Legislation has changed and telephone companies are offering consumers additional distribution through, for example, fiber optic technology. All of these technological advances and changes affect how advertising in 25 both broadcast and cable systems is created, priced, and sold.

25 In the current 100 plus channel environment, viewership is segmented more than it has ever been before. Over the last 15 years of growth in the cable industry, the price cable networks could demand for their airtime was and still is considerably less than broadcast systems. This is fundamentally due to segmenting the viewership audience. Simply put, fewer people are watching a particular channel and their viewing time is spread out over more programming. 30 Viewer market segmentation necessitates lower ad pricing and greater ad efficiency. The existence in the broadcast and cable industry of a system for selling and placing content based

and very low cost advertising time is not in place. As a result, each day independent broadcast and cable systems throughout the country have millions of Ad-spots that go unsold or under sold.

Basic cable system architecture is driven by multiple headends divide priority service areas within an Area of Dominant Influence (ADI). Currently utilized methods of selling cable advertising and cumbersome ad insertion technology make it difficult for cable networks and operators to offer simultaneous fixed position across channels and an advertiser's target ADI.

5 With the advent of digital interactive TV, more channels, more multi-channel providers, microcasting and greater viewership segmentation, the present system of selling and placing cable advertising time is too slow, too inefficient, and too expensive for cable operators. Internet based ad sales systems can speed up the ad avail order process but do not account for future technological advances such as interactive television and video on demand services. These issues do not prevent cable networks from effectively selling advertising, but as more channels expand viewer's options, the value of their Ad-spots decreases. Thus, cable networks need more efficient systems and methods for ad placement.

10 15 Technological advances in the broadcast television, cable television, computer equipment, computer software, telephony and communications in general are changing the face of mass media advertising. High performance RISC (Reduced Instructions Set Computing) Servers running up to 1.00 MHz has made digital video streaming a reality. Digital Compression Technology (DCT) has increased the carriage, transportation and delivery capability of satellites 20 by as much as 16 times. Low earth orbiting satellites (LEOS) will make real time transmission of video and data much easier. Satellite cable networks will provide more multiplex channel programming and new broadcast networks will be launched.

25 New interactive TV and Video-on-demand technology (VOD) will allow viewers to select what and when they view TV programming. IVDS (Interactive Video and Data Service) technology and Data over Video (DOV) technology will quicken fundamental changes in how television will be used. The television set sitting in people's homes will change from a passive device to an active device. Active television viewing necessitates a paradigm shift in ad placement. Viewing times will not fall into particular day-parts on the top or the bottom of the hour. Today content scheduled at specific times drives viewing patterns, in the interactive world 30 unscheduled content alone will drive viewing patterns. Advertising value will be more closely associated with the content as opposed to a fixed day-part in prime time or fringe time.

Advertising will become more measurable and more closely associated with the content selected by the user. Audience psycho-graphics, predispositions such as attitudes, beliefs.

values, goals, personality, and self-concept will be more readily measured by actual behavior. Classifying video content in relation to reference groups, social class, demography, lifestyle, brand loyalty, and buying patterns will become a more important part of a media planning. Interactivity will enhance our polling ability of such things as awareness, interest, desire and action.

5 In the New World of technology, the old adage of "Half my advertising money is wasted, but I can't figure out which half?" will no longer prevail. In advertising, TV has been critical to building brand loyalty. On-line computer services, the Internet, the World Wide Web (WWW), virtual communities, e-commerce, the implementation of Global Positioning Systems in wireless 10 communication devices and automobiles, and mobile interactive services such as in-flight video, are new methods of communicating with specific target demographics which may lead to a change in the architecture of building brand loyalty. Subsequently these changes will lead to a shift as to how advertising-spots are placed.

15 Television is not just changing; it is and will continue to go through a complete metamorphosis. The 100 plus channel environment will raise questions regarding such issues as locating "Ad avail," how to associate results with specific programming, changing psychographics, demographic information, and setting rates or pricing. Advances in technology will bring new competition with a whole new set of players and operational issues. "Ad avail," which are also referred to as "Ad spots," refer to time slots that are reserved for advertising. For 20 example, consider a typical 7:00pm to 7:30pm television time slot. This time slot contains a plurality of sub-time slots that are reserved for advertising. Ad-avails or Ad-spots include one or more of these time slots reserved for advertising. In the interactive television environment where viewers select video content and "viewing time frames" the traditional time slots will no longer be valid. Day part programming and appointment TV will eventually disappear. Ad-avails 25 suffer from assignments to particular time slots because present technology does not account for the dynamic nature of VOD. Dynamic placement of ad-avails or ad-spots eliminates the need for traditional time slot allocations.

30 Regional Bell Operating Companies (RBOCS) are entering the interactive/VOD television industry, as are Video Dial Tone technology companies. This technology will give consumers more choices on the delivery system. Competitors will be looking for ways to differentiate themselves from the competition. Competition will give birth to a change in the amount and type of programming. Increased market fragmentation will require a different and more dynamic traffic management system.

In addition to advances in technology, network compensation is a driving force for change. Traditionally payments made by the national networks to their affiliate stations or network compensation accounted for about 9% of the income to local affiliates. Since the amount of network compensation paid to affiliate television stations is based on a number of variables, it varies widely. While the four networks differ somewhat in their computations of the compensation rate, all the computations are based on the following common principals. These principals will be changed because of the effects of interactive technology and the eventual death of appointment TV.

*Network station rate* (NSR) is a flat fee, which estimates the value of an hour of a station's airtime. Since a station's market size, coverage area, and popularity determines NSR, it ranges from as little as \$50 in the smallest markets to about \$20,000 in New York City. As the capability to more accurately measure advertising results is developed, and viewers are disbursed over more niche programming, the value of an hour will change. The change will be significant relative to the segmentation of products being sold. Simply put, small markets will be more important to some types of products effecting the NSR of that local station's airtime.

*Hourly percentage, or equivalent hours.* Today, certain parts of the broadcast day are more valuable than others to the broadcaster. Consequently, the network pays more to its affiliates to carry programs during prime viewing times than it does for less valuable time periods. An equivalent hour is a clock hour multiplied by a percentage estimating the value of the time period in which it comes. For example, from 6 to 11 PM, an equivalent hour is 100% of a clock hour; from 5 to 6 PM, it is sold as 50% of a clock hour; and from 9AM to 5 PM, it is sold as 33% of a clock hour.

Once the number of clock hours during which an affiliate carries network programming is adjusted to reflect equivalent hours, it is multiplied by the NSR to determine the station's gross compensation. VOD will give the viewer the power to produce a custom viewing schedule. This will make it more difficult to predict prime viewing hours and the value to carriage of a network's programming.

*Overhead expenses.* Each network deducts a portion of the station's compensation for its programming and operations expenses. In the CBS formula, network overhead has been valued at between 8 and 9 equivalent hours per month; at ABC, the amount has been 235% of the network's per month station rate.

*Reimbursements.* Added back in to the station's compensation is the percentage of network time occupied by promotional announcements and local cut-ins and tags.

Despite the fact that each network uses its own formulas for calculating compensation, the bottom-line figures for affiliates within the same market are very similar. Stations in small markets, for example, Beaumont, Texas, command about a \$500 per hour rate; those in large cities, such as Boston or New York, are paid in excess of \$3000 per equivalent hour.

5 Network compensation is only a small part of station income. Thus, the value of an affiliation contract is more than monetary. Network affiliation allows stations to fill up their airtime. It enables stations to present a variety of popular and special programs, and it generates strong lead-in and adjacent audiences for its local news and syndicated programs. Finally, the network affiliation allows stations to "piggyback" on the considerable promotion and publicity  
10 value of the networks and their leading stars. Piggybacking is an intrinsic element to network affiliation. The technology revolution will increase competition for the national networks and may diminish their intrinsic value to the affiliate.

15 Often, programs with national advertisements already included in the show are provided outright or at reduced cost to stations. In network television, examples of *bartered programs* are talk shows (like The Today Show and The Tonight Show). In lieu of network compensation, the networks provide advertising openings, or windows, for the inclusion of local station spots.

Recent years have seen the increase of barter syndication, particularly among independent stations. In this arrangement, strip newsmagazine and entertainment shows are provided by satellite to local stations, with a certain number of national advertisements presold. As with The  
20 Today Show and The Tonight Show, a certain portion of local spot time is withheld from sale by the local station. Recent programs delivered on a barter syndication method include Solid Gold, Entertainment Tonight, and Independent Network News.

25 Barter arrangements may also involve trading advertising time or promotional announcements to retailers in return for merchandise. In television, barter is frequently used to outfit newscasters, to provide vehicles for new crews, and to obtain meals or entertainment for sales and management personnel.

Like network compensation, the total value of barter for both programming and merchandise represents only a small percentage of station revenue. In the early 1980s, barter accounted for about \$130,000 per station, or about 2.5% of gross station revenue. Barter is of  
30 more value to independents than affiliates, accounting, on the average, for over 5% of total station revenue.

The major source of station revenue remains the sales of commercial time to network and national, regional, and local advertisers. The volume of television advertising expenditures from 1965 to 1990 in each of these categories has grown 1,192% to \$32.3 billion.

As source of radio revenues have shifted in the past 15 years. *television has simply*  
5 *become more and more profitable.* Network revenue has been consistent, representing over 40% of aggregate advertising expenditures. Similarly, network and regional spot sales as a percentage of revenues have remained steady, although the figures indicate a gradual slide through the years: from 35% in 1965 to 30% through the 1980s. And, like radio, local sales have escalated, but at a lesser rate. In the mid-sixties, stations earned 15% of their income, on average, from local spot  
10 sales: by the mid-1980's the figure was nearing 30 percent.

There has been a phenomenal increase in the volume of television advertising. In 1965, the television industry generated over \$2 ½ billion. By 1975, revenue had more than doubled. It had doubled again by 1980 and increased nearly threefold before 1990.

Why has television advertising volume taken off in recent years? A number of factors are  
15 involved.

First, the phenomenal diffusion of sets and the rising number of sets have made television the ideal mass audience buy for advertisers. At a time when newspaper readership is declining and radio is becoming fractionalized, television still offers the greatest national and local circulation for advertisers.

20 Television's advertising growth also was fueled by some incredible program performances during the period. Each year, the Super Bowl broadcast garners audience shares above 50%. In late 1970's, more than half the adult population watched part or all of Roots. And in February of 1983, two thirds of U.S. households tuned in to the final episode of M\*A\*S\*H. Despite escalating spot costs (for example, \$400,000 for a 30-second spot during the last  
25 M\*A\*S\*H), advertisers have found television a cost-efficient way to reach consumers.

Other factors accounting for the increase in television advertising include: People have more channels to view and advertisers have more availabilities to buy; more people own color television sets: Thus products can be promoted more excitingly and vividly; the baby-boomers have grown up (they have money in their pockets and television watching is their primary shared experience).  
30 Last but not least, the relaxation and elimination of the "Program Length Commercial Rules" by the Federal Communications Commission (FCC) in compliance with deregulation in the communications field has increased the number of ad-availabilities that can be allocated to one hour of

programming. These former rules limited the number of minutes in an hour of programming that programmers and networks operators could allocate for advertising.

The amount of advertising revenue generated by television stations is largely dependent upon the type of facility. Affiliated stations obtain about 45% of their revenues from sales to 5 national and regional advertisers negotiated by their station representatives. Another 45% of advertising revenue come from sales to local advertisers. The remainder comes from network compensation. With an absence of network compensation, Independents place a stronger reliance on their station representative firm to bring in lucrative national and regional sales contracts. In fact, 60% of the advertising revenue of a typical independent is attributable to spot 10 advertising; 40% to local sales.

In a very real sense television broadcasters and cable TV operators are victims of their own success. As they succeeded in developing their business, they attracted more attention. Revenues are such that expensive interactive technology has become more and more viable and competing for viewers is forcing them to deploy these new technologies. In the near future the 15 old ways and many present day Internet systems of placing, selling and buying advertising will have to change. In the interactive television environment, ad placement and ad sales systems must accommodate for the "cause and effects" of several new variables beginning with the elimination of appointment TV by VOD. The ability of interactive technology to immediately measure video ad-spot placement's advertising effectiveness will force a change in how ad-spots 20 are priced. Viewer choice is the most profound variable to effect how ad-spots are placed and priced. In all, content alone not time slots will drive the relative value of an ad-spot. New "dynamic" systems for pricing and placement of advertising will replace the present state of the art of selling and buying advertising.

The new characteristics of advertising will include; dynamic placement, user and content 25 driven advertisement, dynamic pricing, higher levels of analysis, statistical modeling, shorter lead times, ad switching, ad mapping, less pre-selling, greater rate diversification, increased spot sales, inclusion of on-line services and Internet services within mass advertising mix, on-line ordering, video libraries, electronic affidavits, flexible traffic system, daily avails inventory management, automatic electronic invoicing, flash reporting with short notice look ahead tables, 30 on-line booking information, encrypted security, ability to insert or retrieve video, direct linkage for media buying, rate flexibility, direct on-line linkage of agencies, reports linking rates, billing, bookings and avails and linkage of results to specific campaigns.

Summary of the Invention

Short Notice Advertising Placement, to be known as SNAP or the Invention, is a new market ad placement system in which Ad sellers (such as, cable operators, broadcasters, computer based electronic on-line services, video RBOC, radio broadcasters, microcasting 5 distributors, and the like) can sell "dynamically placed" Ad-avails and Ad buyers will be able to purchase interactive media, cable and broadcast ad-spots reflecting a new dynamic pricing in response to the realities of interactive television. This new market ad placement system (the Invention) can be incorporated into any new or existing regional, national or international electronic ad-sales exchange made available to both buyers and seller via a plurality of networks 10 including but not limited to private or public electronic on-line computer networks, Internet, Intranets and/or 1-800 telephone service networks. SNAP (the Invention) will enable the exchange operator to act as the agent of the Ad seller, similar to discount travel agencies and discount stockbrokers. As the agent of the ad seller the exchange operator will use the Invention to electronically transmit, sell, barter or put for auction allocated dynamic ad-spots then 15 effectuate the placement of the video ad-spots. Conversely, buyers of media ad-spots will use the Invention to purchase or barter outright and/or purchase through an auction ad-spots and electronically transmit advertising content to be placed within the content of the video.

SNAP market exchange operators can begin operations with any interactive media industry including the existing interactive cable TV industry but is not limited to interactive 20 cable TV. Similarly, dynamic Ad-avails for interactive broadcast stations, DBS networks, MMDS networks, LMDS networks and any other future electronic media such as, computer based interactive networks can be sold in what will be called the "SNAP" market.

*Market Size for Dynamic Ad-avails*

The size of the market's product availability will fluctuate with the units of interactive 25 cable, broadcast, or electronic media advertising spots, which are allocated for sale or remain unsold after allocated for sale or are available on cancellation or rescheduling of previously sold ad-spots. Interactive television and VOD services are in their infancy and no systems or standards have been established to account or manage the new ad placement variables associated with interactive TV and VOD. Prices will fluctuate according to the demand. Ad-spot value will 30 depend on certain dynamic variables. Fundamental value is establish based on the relationship of the content to the viewer's demographics, the number of viewers requesting the content at a particular time, and the statistical valuation of its "On the Market Probability Value" (OMPV) and what the SNAP market participants are willing to pay for the OMPV values.

Relative to the present Invention, probability is defined as the extent to which an event (i.e., request for information or purchase of advertised product) is likely to occur, measured by the ratio of the favorable cases to the whole number of cases possible. Additionally, values are defined in their traditional mathematical manner where the amount(s) are denoted by an algebraic term or expression. OMPV values automatically recalculate as the number of cases is increased or decreased and as actual results (outcomes) are reported. SNAP "the present Invention" manages the buy/sell activities throughout the price fluctuation process. This price fluctuation will range between a minimum and maximum set: firstly by the seller based OPMV analysis; secondly through active seller/buyer negotiations; and thirdly through an open auctioning exchange. Bonuses are earned based on user feedback. Sellers will enjoy a three-step pricing process for selling their dynamic Ad-avail inventory. Ultimately the potential size of the market encompasses all placements of dynamic Ad-avails on all interactive cable, broadcast and electronic media. For the purpose of sizing the market we will make some basic assumptions that the interactive/VOD market will be equal to X times the present video market.

15        *SNAP Operation and Marketing - Methodology*

The operation will consist of placing dynamic Ad-spots into inventory a sufficient number of days prior to initial air time using the Invention's Synchronized Computer Ad-Sales Network (SCAN) system. Dynamic ad-spots are specific locations set along the video stream that are marked to interrupt the transmission of the video programming content and replace it with advertisement video content for the length of the advertisement itself. These ad-spots or ad-avails are dynamic because they are not assigned any particular time frame or time-slot of the day-part wheel or hourly ad insertion cycle. Ad-spot assignments relate to the content selected by the viewer in a location most desirable for an interruption that does not suffer the continuity of the video content.

20        The SCAN system is a database management system within the electronic ad-sales exchange. SNAP will make these dynamic Ad-spots available to Ad buyers who subscribe to the exchange. Subscribing Ad-buyers place their video ads into the SCAN system where their ads are processed and prepared for placement. Media buyers are responsible for providing the electronic ad-sales exchange operator with the actual video spot to place a copy in the SNAP video library. Ad sellers are responsible to ensure the video content has been processed into an acceptable interactive format with appropriate ad-mapping markers or other recognition devices that designate the ad-spot insertion location. The Invention anticipates providing ad sellers the software to conduct the ad mapping procedure.

Ad sellers and buyer gain access to the SNAP system via electronic means such as the public switching telephone network (PSTN), a private circuit switch, dedicated lines or packet data network, private Intranets or the Internet. Access can be gained via wireline or wireless networks or satellite means.

5       SCAN provides the necessary demographic data, content OMPV information, ad avail inventory and any other decision making information. Buyers analyze the data and make their final selection and commitments before the end of a specified period. Once an Ad buyer has placed their bid and the order has been accepted, SNAP may enter the request into the cable TV systems, and/or broadcast station's ad management computer via modem, Internet, dedicated line  
10      etc. . SNAP will assist ongoing subscribers by maintaining a library of video advertisements for that buyer's client, but the buyer will have to provide SNAP appropriate releases. After air date the cable system and/or broadcast station will provide appropriate verification and SNAP will provide the administration. Billings and collection will be also provided by SNAP. Mass marketing and targeted marketing tools such as trade publications, trade shows, direct mail,  
15      telemarketing and personal selling will be employed by SNAP.

Architecturally the Invention is comprised of a plurality of computer stations and/or computer networks linked to a SNAP mainframe computer that manages the synchronized computer ad-sales network at the physical layer. Links between the computers and SNAP can be accomplished by the use of the PSTN; a private or public packet data network, the Internet, an  
20      Intranet or a satellite based network. Computer stations represent ad (media) buyers and interactive/VOD ad sellers such as national television networks, local television networks, cable TV systems, cable TV programming networks and other electronic media distributors. Computer networks represent distributed data base networks that provide SNAP such things as but not limited to, consumer demographics, video program content demographics, viewer ratings,  
25      audience psycho-graphics, etc. Such things as predispositions in attitudes, beliefs, values, goals, personality, and self-concept will be more readily measured by actual behavior as measured by video selections and responses to interactive advertising.

Statistical valuation software resides in the SNAP computer. This software dynamically performs the difficult tasks associated with providing ongoing OMPV values. Pricing control and  
30      bid management software resides in the SNAP computer. This software manages the variables associated with dynamic pricing and provides the system with the ability to adjust final pricing based on OMPV, actual number of viewers, location of the ad spot within the video program, results of bidding and viewer feed back. Additionally market analysis software resides in

SCAN. This software allows ad buyers to choose target audience and search which networks, programming, shows and/or combination of networks, programming and shows will deliver that target audience. Ad mapping software resides in the SNAP mainframe computer and in servers located at the points of broadcast such as the cable TV headend, broadcast station or electronic media network-operating center. Response measuring, fulfillment and traffic server software resides in SNAP but outside of SCAN. Additionally, response measuring, fulfillment and traffic client software resides at the points of broadcast.

#### Brief Description of the Drawings

10 The accompanying drawings, which are incorporated herein and form part of the specification, illustrate a preferred embodiment of the present invention and, together with the description, further serve to explain the principles of the invention and to enable a person skilled in the pertinent art to make and use the invention. In the drawings, like reference numbers indicate identical or functionally similar elements. Additionally, the left-most digit(s) of a  
15 reference number identifies the drawing in which the reference number first appears.

FIG. 1 illustrates a representative Ad buyer and a representative Ad vendor accessing the SNAP system and direct-line connection to a computer data base network.

FIGS. 2A & B are flow charts illustrating a bid-purchase process.

20 FIG. 3 illustrates the SNAP system in further detail and illustrates multiple ad-sellers accessing the SNAP system.

FIG. 4 illustrates types of information stored in the SNAP system.

FIG. 5 illustrates a database within the SNAP system and the types of information stored in the database.

FIG. 6 illustrates a SCAN Ad-Avails placement schedule.

25 FIG. 7 illustrates a Typical Fixed Time Based Ad Placement System.

FIG. 8 illustrates a Dynamic Content Based Ad Placement System.

#### Description of the Preferred Embodiments

Short Notice Advertising Placement (SNAP) is an advertisement placement and  
30 management system incorporated into an advertising spot (Ad spot) trading exchange similar to the New York Stock Exchange. Buyers and sellers meet electronically to buy and sell "dynamically placed" advertising spots, which are then made available by the appropriate broadcast video distributor or multi-channel video-programming distributor. Electronically

transmitted video-advertising commercials are processed by the system and prepared for insertion within a designated video program of a specific video broadcast. Dynamic Ad spot placements and management of a dynamic pricing structure for the buy/sell process within this exchange are the basic services provided by the system. Fundamentally the difference between 5 SNAP and NYSE is that Ad-spots unlike stocks are limited and perishable commodities which diminish in value and are lost as time passes. This limited nature increases or decreases their value relative to variables such as viewer choice, viewer feedback, the network demographics and content psycho graphics properties etc., which attract viewers and listeners.

The need for these fundamental services have come and will continue to come about by 10 the deployment of interactive TV/VOD, the proliferation of video programming, the changing economics of broadcast TV, the increased complexity of advertising, the success of the cable industry, the success of interactive on-line computer services, computer technology, changing government regulations, video compression, technological convergence and the advent of the entire video on demand environment. These new forces create complexities in developing the 15 advertising mix, in identifying appropriate media, in identifying Ad-spots availability and in purchasing mass media ads, at the right price and for the right audience.

Ad buyers are demanding more from advertising agencies while agency revenues are falling relative to a percent of advertising placement. Advertising agency revenues have fallen from an average of 15% to somewhere around 9% of placement. In the meantime buying 20 advertising has become more complex and expensive. Viewers and listeners are segmenting their entertainment habits among a cornucopia of new and interactive TV and radio programming. Falling agency revenues as a percent of placements is not the only indices of the need for a SNAP market. Growing viewer ship ratings of cable programming, proliferation of radio shows, new entrants into the video distribution industry and a growing use of on-line 25 services are further segmenting consumers and increasing the need for a SNAP market. In addition, the introduction of video dial tone, the interactive television with its video on demand service and radio will dramatically impact advertising revenues thereby eroding the available operating capital of media vendors. New methods of operating will be needed to reduce basic operating cost.

30 Apart from basic placement/management and exchange services, SNAP will offer interactive "SmartServices." These services will be offered in packages and/or a la carte. The SmartServices services range from a simple cable headend report to selecting all available media based on demo/psycho-graphic parameters or to an analysis of viewership dispersion and

responses. Subscription levels will determine access, if any, to these additional reports on SmartServices.

SNAP ads may be purchased in two manners:

1. Although SNAP operates within an electronic exchange, Ad buyers can call a toll free number and talk to a SNAP representative. The buyer tells the representative the area of the country for which he or she is interested in purchasing advertising and the specific demographics to which he or she is interested in advertising. The SNAP representative conducts a search using a SNAP software system referred to herein as the SCAN system, or simply SCAN. An on-screen report detailing which, if any qualified Ad-spots presently remain unsold is displayed and/or generated for fax transmission. A specific content, date and quantity determine a qualified ad spot or spots. To qualify Ad-spots must air no sooner than and no longer than a set short period of time from the date of the order. There must be a minimum block of a specified number of ad times available within the Ad spot requested by the buyer. In one embodiment, fifty is the minimum purchase, which can be made at any one time, and the minimum order is \$1000. Ads could range in price from \$5 to \$1500 depending on OMPV, market bids and the minimal rates set by the cable operator, network broadcaster, satellite broadcaster, local affiliates, radio broadcaster, on-line broadcaster and RBOCs.

2. Ad buyers can also have direct access to the SCAN system by subscribing to the SNAP on-line service and using a web browser to access the service. This on-line service facilitates the use of the SCAN system by Buyers who prefer to have in-house buying capabilities. Access to the service is gained by use of specific password and PIN identification. The level of entry and types of reports will depend on which particular level of service the Buyer has purchased with their subscription. The highest level of service will include Automatic Call and Report Service (ACRS). With this service each morning a SmartSystem will automatically call the Buyer's system and report the previous day's activities, i.e., ads bought (What, Where, and When), new ads and/or new programming placed on the system, etc. This level of service will also allow access to the system's Strategic and Tactical Ad Modeling (S-TAM) capability. The lowest level of service will allow the Buyer to search the available ad spot inventory and to place orders or bids for ad purchases. Individual SmartSystem services and reports can be purchased on an a la carte basis. Rates for a la carte services will be substantially higher.

Ad Vendors place Ad-spots into the SNAP system in three manners. Ad Vendors are broadcasters, broadcasters' local affiliates, cable satellite programmers, cable operators or systems, radio stations, DBS cable operators, MMDS cable operators, RBOC video dial tone

operators, on-line computer or multimedia services and any other video or radio operators who must sell ads. Qualified vendors can place Ad-spots into the SNAP system by telephone, fax, or by on-line modem. To qualify, the Ad vendor should be providing interactive and/or VOD services and must agree to fill out a confidential vendor profile, prepare the interactive video content for dynamic ad placement, provide the demographics of the show, program or channel and agree to abide by the SNAP market rules. These rules require that the vendor guarantee ad spot placement to the highest bidder at the prescribed close of the bids at the highest price offered. Among other rules, the vendor must be a SNAP member.

Referring now to FIG. 1, FIG. 1 illustrates a representative Ad buyer 102 and a representative Ad vendor 104 accessing a SNAP system 106. SNAP system 106 is a data processing system, preferably with a large capacity. Preferably, SNAP system 106 includes at least one mainframe computer, workstation, or high-end computer system and a web server. Ad buyer 102 electronically transmits video advertisements to SNAP system 106. SNAP system 106 process the video advertisement and transmits the processed video advertisements to an appropriate video storage system within the Computer DataBase Networks & video storage 114.

Provided that Ad vendor 104 is a qualified Ad vendor, as described above, Ad vendor 104 can use a personal computer (PC) 108 to connect to system 106 for the purpose of transmitting its Ad spots, and the demographic information associated with each Ad spot, to system 106. There are a variety of ways for PC 108 to connect to system 106. For example, PC 108 can use a modem to connect to system 106 using the public switched telephone network (PSTN) or it can connect to system 106 through a packet network, such as the Internet. Ad vendor 104 uses PC 108 so it can download necessary SNAP video programming software from SNAP system 106. One skilled in the art will recognize that the invention is not limited to any particular connection means.

Ad buyer 102 uses PC 110 and a standard web browser 112 (such as Netscape™ or InternetExplorer™) to connect to system 106 and view a SNAP web page. After connecting to system 106, buyer 102 transmits his validation information, which typically consists of a user-name and password, to system 106. System 106 then searches a validation database 118 to validate buyer 102. If buyer 102 is validated, buyer 102 uses web browser 112 running on PC 110 to conduct a search of the Ad-spots entered into system 106 and to place bids.

FIGS. 2A-B are a flow-chart illustrating a bid-purchase process for purchasing Ad spots. The process begins in step 202, where buyer 102 uses PC 110 to connect to system 106. After connecting to system 106, the buyer 102's validation information is transmitted thereto (step

204). Buyer 102 then receives a transmission from system 106 indicating, at the least, whether buyer 102 is a valid user. Assuming buyer 102 has been validated, control passes to step 208.

In step 208, buyer 102 enters in Ad spot search criteria into the SNAP web page displayed in the web browser. Ad spot search criteria can include demographic information and a geographic area. After buyer 102 enters his desired search criteria, the web browser transmits the search criteria to system 106 (step 210). Upon receiving the search criteria, system 106 searches its database of Ad-spots for unsold, qualified Ad-spots that match the search criteria (i.e., matching Ad spots) (step 212). In one embodiment, a qualified Ad spot is an Ad spot that airs no sooner than X days or hours and no later than Y days or hours from the date or time of the search. X and Y are configurable values. Preferably, X is equal to 3 and Y is equal to 5. The matching Ad-spots together with corresponding bid and demographic information is then transmitted to PC 110 and displayed to buyer 102 (step 214). Each matching Ad spot has corresponding OMPV, bid information and demographic information. Bid information may include a minimum allowable bid, the current maximum bid, and/or the bid close date and time.

15 The bid and demographic information is transmitted with each matching Ad spot.

Buyer 102 has the option of bidding on one or more of the matching Ad spots. After buyer 102 enters into PC 110 his bid for the Ad-spots he would like to purchase, PC 110 transmits this bid information to system 106 (step 216). System 106 will confirm that the bid has been received (step 217). After the close of bidding for a particular Ad spot, buyer 102 is notified as to whether his bid for that Ad spot was successful (step 218). For each successful bid, buyer 102 is responsible for providing the seller of the Ad spot with the advertising content to be "aired" during the Ad spot. Buyer 102 can transmit the content to system 106 (step 220), or buyer 102 can select content that has been previously stored in system 106 (step 221).

20 SNAP system 106 then forwards the content to the seller (step 222). In another embodiment, buyer 102 can transmit the content directly to the seller. In this manner, short notice advertising placement is achieved.

In one embodiment, system 106 can notify buyer 102 if buyer 102 was out bid by another buyer. In response to receiving such a notification, which may contain the value of the current highest bid, buyer 102 can submit a new bid that is higher than the current highest bid. System 30 106 can notify buyer through an electronic mail message, electronic page, phone call, or any other notification means.

While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. Thus,

the breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

Referring now to FIG. 3, this figure illustrates a distributed plurality of computer access points including a media buyer and a distribution of regional SNAP centers linked to the SNAP system. Architecturally SNAP is fully scalable and can be deployed in a variety of configurations dependent on the business necessities. FIG. 3 also servers to illustrate a plurality of data point made available to media buyer using the facilities of the SNAP network. Any number of network configurations are applicable to SNAP, therefore any knowledgeable individual could envision any number of configurations.

Referring now to FIG. 4, as illustrated in Fig. 4 maintained within the SNAP/SCAN mainframe computer Fig. 1 (106) or cluster servers and/or the SNAP Computer Data Base Network and Video Storage Fig. 1 (114) is a plurality of data bases. These data bases include but are not limited to such things as OMPV programming values, media buyers, media vendors, ad-avail inventory, consumer demographics, viewer ratings and/or responses, etc. Any number of data base configurations are applicable to SNAP, therefore any knowledgeable individual could envision any number of data base configurations.

Referring now to FIG. 5, as illustrated in Fig. 5, the SCAN network software manages SNAP data resident in the SNAP Computer Data Base Network illustrated in Fig. 1 (114). Data resident in SCAN is updated on an ongoing basis from this network. Queries, requests, sequential polling and many other data base techniques are used by SCAN to manage the transaction needed to provide the ad buyer with the appropriate data to purchase ad-spots. Any number of data base management techniques are applicable to SNAP, therefore any knowledgeable individual could envision any number of data base management techniques.

Referring now to FIG. 6, illustrated in Fig. 6 is a possible SNAP - SCAN Ad Avails Placement Schedule Report that could be established for the buy/sell process. This illustration is offered as an example scheduling report. Actual scheduling may vary in sequence, time intervals and/or any other variables associated with the ad placement process. Any number Ad Avails Placement Schedule techniques are applicable to SNAP, therefore any knowledgeable individual could envision any number of Ad Avails Placement Schedule techniques.

Standard ad placement is based on specific time intervals whereby ad spots are made available at the top of the hour, the quarter of the hour, the half-hour and at three-quarters of the hour. A certain amount of time is allocated to ad spots. Prior to the passage, by Congress, of the

Communications Act, the FCC regulated the amount of time made available for advertising. Broadcast video distributors were limited to no more than 16 minutes in any one-hour of TV broadcasting. If there were allocations greater than 16 minutes the entire telecast could be declared a commercial violating FCC rules. After the passage of the Communications Act these rules no longer apply therefore video distributor can now dedicate any number of minutes to commercial ad spots. They are to use their best judgement as to how many ad spot will be made available. Although the number of minutes may vary within a viewing segment video distributor set ad spot allocation based on a fix time frame within the day-part wheel, irrespective of programming content.

10 Fig. 7 is a sample illustration of the Day-Part Programming Wheel 702 and a typical Hourly Ad Insertion cycle 706. The day-Part Programming Wheel 702 is broken up into a number of categories such as Prime Time 704, Day Time (not shown), Fringe Time (not shown) and Late Night (not shown), etc. These day parts are important because they relate to the number of viewers that are estimated to be watching during the particular time, i.e., Prime Time 704. In 15 the Hourly Ad Insertion Cycle 706 time frames allocations 708 are fixed.

Dynamic Content Based Ad Placement as illustrated in Fig. 8 is entirely different. Fixed time frames set within an hourly ad insertion cycle and day-part wheel are not practical or desirable in an interactive/VOD environment. Viewer choice is the major consumer benefit and the driving force for interactive television. Viewers can select what they want to see, when they 20 want to see it. The greater probability is that choices of when and what to view are made these choices will not conform to the day-part wheel and hourly ad insertion cycle. If ad spots where to be scheduled for placement on the present fixed time frame basis, there is a high probability that the continuity of the video will be egregiously disrupted. Satisfactory viewing may suffer from these disruptions and consumers may become dissatisfied with television.

25 Dynamic ad placement is designed to allocate specific time frames between scenes within the video stream as opposed to a particular hourly time frame. As illustrated in Fig. 8, video frames 806 (a through h) isochronously stream from their transmission point (not shown) to the television screen (not shown). A certain number of video frames 806 make up scene 1 808 (a) and scene 2 808 (b). Each scene will fill a specific time frame scene 1 808 (a)  $t_1 - t_n$  and scene 2 30 808 (b)  $t_n - t_z$ . Fig. 8 shows there are four video frames 806 in each scene but this is not likely to always be the case. Scenes differ in the number of frames and the length of time needed for proper viewing this is just an abridged sample video stream. Using SNAP software or other available software interactive video is processed to enhance viewing quality and add interactive

properties. SNAP uses ad mapping techniques to locate and mark specific breaks between scenes that are suitable for dynamic ad placement.

5 Video advertisement. V-AD (z -z1) 802, is inserted at ad mapping mark 804 between scene 1 808 (a) and scene 2 808 (b) for time interval t1= t2=tz. These dynamic ad placement techniques ensure that any commercial interruptions do not disrupt the continuity of the video content. Video advertisement 802 is a representation of a singular commercial ad that may be made up of a number of video frames. V-AD (z - z1) 802 is a representation of a plurality of advertisements the size of which will vary as will the number frame and time needed to transmit the advertisement. SNAP employs ad-mapping techniques to mark scene breaks and make ready 10 the ad spot. Any other video marking techniques are applicable to SNAP; therefore any knowledgeable individual could envision the use of any number of these techniques.

15 Clearly, other possibilities of the system of the present invention are also possible. The system of the present invention has been described at this time in a particular environment of an advertising exchange for the dynamic placement of ad spots directed to interactive television and video on demand. However the system of the present invention can find other applications in other environments.

20 As an example, the system of the present invention could also be used to electronically dynamically place and transmit audio advertisements onto radio ad avail. At this time radio stations enjoy greater audiences and are increasing in numbers. Additionally, one of the more popular forms of radio programming is "talk radio," which is another form of interactive on demand entertainment. The system of the invention can clearly find application in that the software of the system could be modified to accommodate radio advertisement.

25 The present invention could also be used in school and college admissions and medical residency programs. Private schools, colleges, universities and hospitals all share in suffering the difficult task of locating and placing qualified applicants in the right programs. Conversely, potential students and potential medical residents suffer from locations and being placed in a suitable program. Clearly, the techniques that are used to manage the vast amount of data and accompanying variables associated with identifying, locating and dynamically placing ad spots can find application in a student and medical residency exchange. Any number other multi data 30 base and multi variables exchanges are applicable to the present invention; therefore any knowledgeable individual could envision the use of any number of these techniques with other exchanges.

CLAIMS

1. A method of utilizing dynamic advertising placements within a program, said method comprising the steps of:

5           storing an identity of at least one advertising placement with an associated price in a database an amount of time prior to presentation of the program;

          providing access of said database to a plurality of subscribing advertising buyers;

          accepting at least one bid from at least one of the buyers wherein the bid represents a price offered for the advertising placement;

          comparing the at least one accepted bid with a predetermined criteria;

10           selecting a bid that satisfies the criteria;

          identifying a buyer associated with the selected bid; and

          notifying the buyer with the selected bid.

2. The method of claim 1, wherein a dynamic advertising placement represents an advertisement that is to be inserted at a particular point within a program that is being presented.

3. The method of claim 2, wherein said particular point remains constant regardless of a presentation time of the program.

20           4. The method of claim 1, wherein said presentation is at least one of a video stream, an audio stream and a data stream.

5. The method of claim 1, wherein said amount of time is a number of days.

25           6. The method of claim 1, wherein said amount of time is a number of hours.

7. The method of claim 1, wherein said price is a range between two numerical values.

30           8. The method of claim 1, wherein the buyer with the selected bid provides an advertisement for placement within the program that is presented.

9. A method of utilizing dynamic advertising placements within a program, said method comprising the steps of:

storing an identity of at least one advertising placement with an associated price in a database an amount of time prior to presentation of the program, said price depending on

5 a statistical value as determined by a seller of said placement;

providing access of said database to a plurality of subscribing advertising buyers;

accepting at least one bid from at least one of the buyers wherein the bid represents a price offered for the advertising placement;

comparing the at least one accepted bid with a predetermined criteria;

10 selecting a bid that satisfies the criteria;

identifying a buyer associated with the selected bid; and

notifying the buyer with the selected bid.

10. The method of claim 9, wherein said statistical value measures an exposure of the  
15 advertising placement to a target audience.

11. The method of claim 9, wherein a dynamic advertising placement represents an advertisement that is to be inserted at a particular point within a program that is being presented.

20 12. The method of claim 11, wherein said particular point remains constant regardless of a presentation time of the program.

13. The method of claim 9, wherein said presentation is at least one of a video stream, an audio stream and a data stream.

25 14. The method of claim 9, wherein said amount of time is a number of days.

15. The method of claim 9, wherein said amount of time is a number of hours.

30 16. The method of claim 9, wherein said price is a range between two numerical values.

17. The method of claim 9, wherein the buyer with the selected bid provides an advertisement for placement within the program that is presented.

18. A system for facilitating utilization of dynamic advertising placements within a program, said system comprising:

5 a storage means for storing an identity of at least one advertising placement with an associated price an amount of time prior to presentation of the program;

an access means for providing access of said storage means to a plurality of subscribing advertising buyers;

10 an input means for inputting at least one bid by at least one of the buyers wherein the bid represents a price offered for the advertising placement;

a comparing means for comparing said bid with a predetermined criteria and for selecting a bid that satisfies the criteria;

a matching means for identifying a buyer associated with the selected bid; and

15 notification means for notifying the buyer associated with the selected bid.

19. The system of claim 18, wherein a dynamic advertising placement represents an advertisement that is to be inserted at a particular point within a program that is being presented.

20. 20. The system of claim 18, wherein said associate price is dependent on a statistical value as determined by a seller of said placement.

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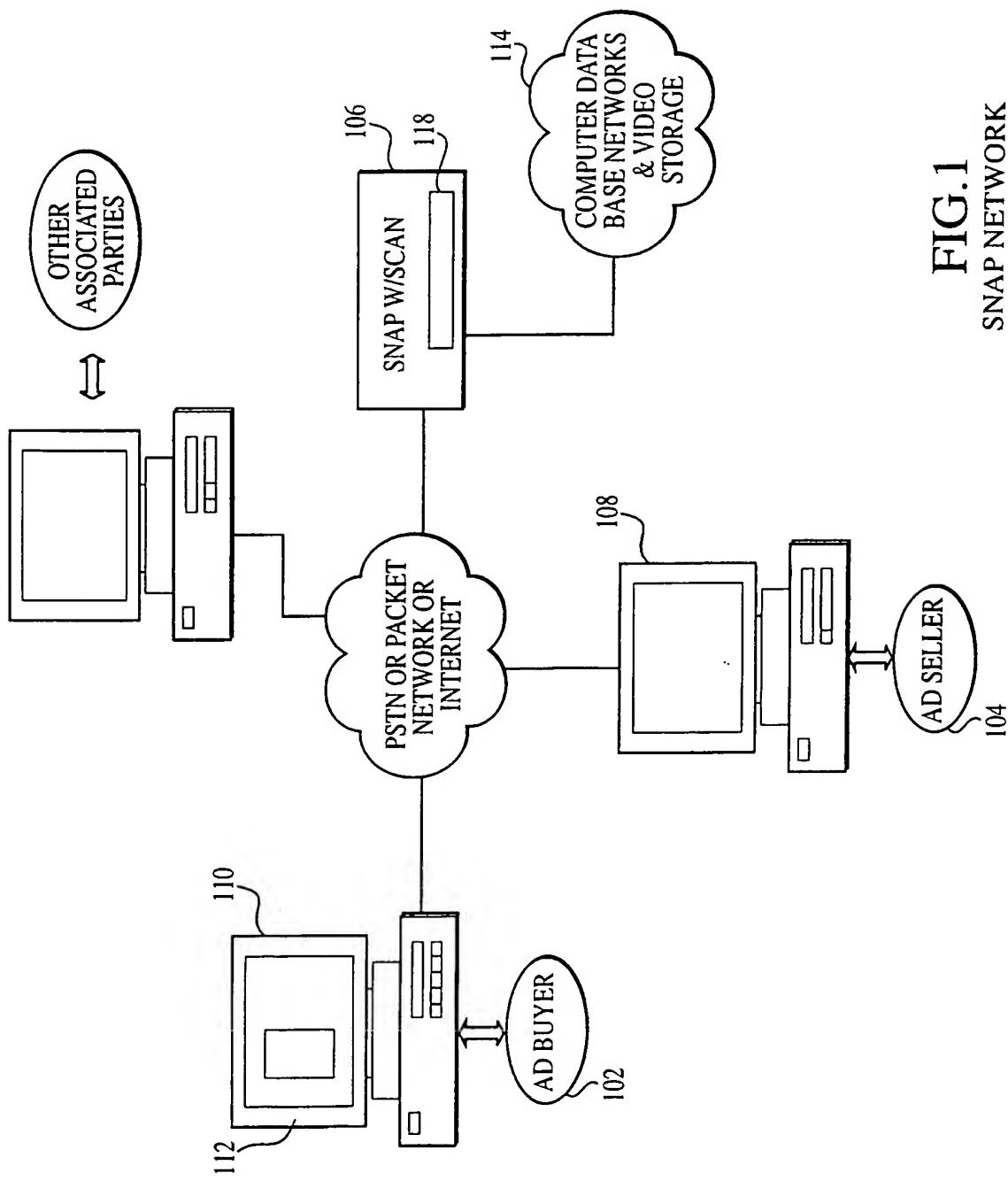


FIG. 1  
SNAP NETWORK

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FIG. 2A

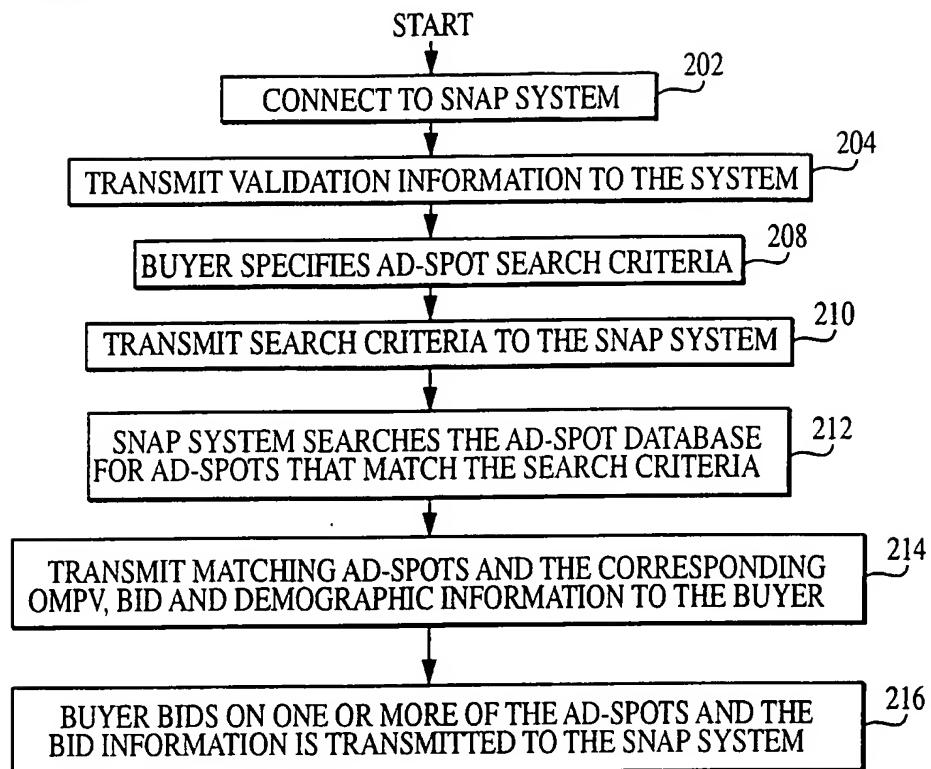
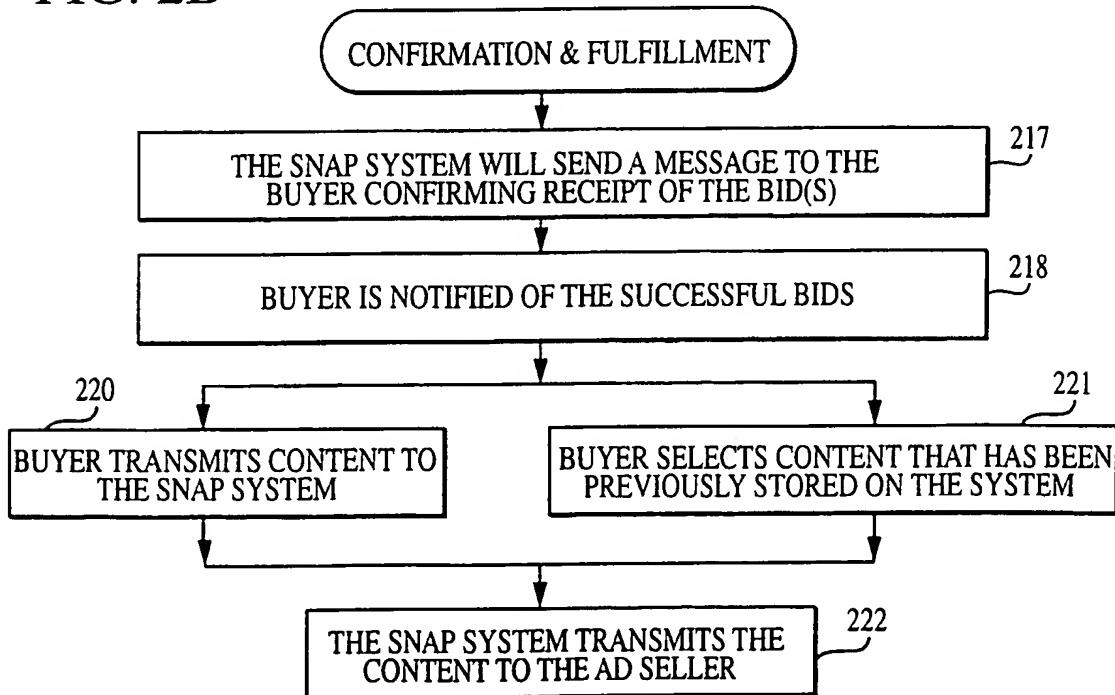


FIG. 2B



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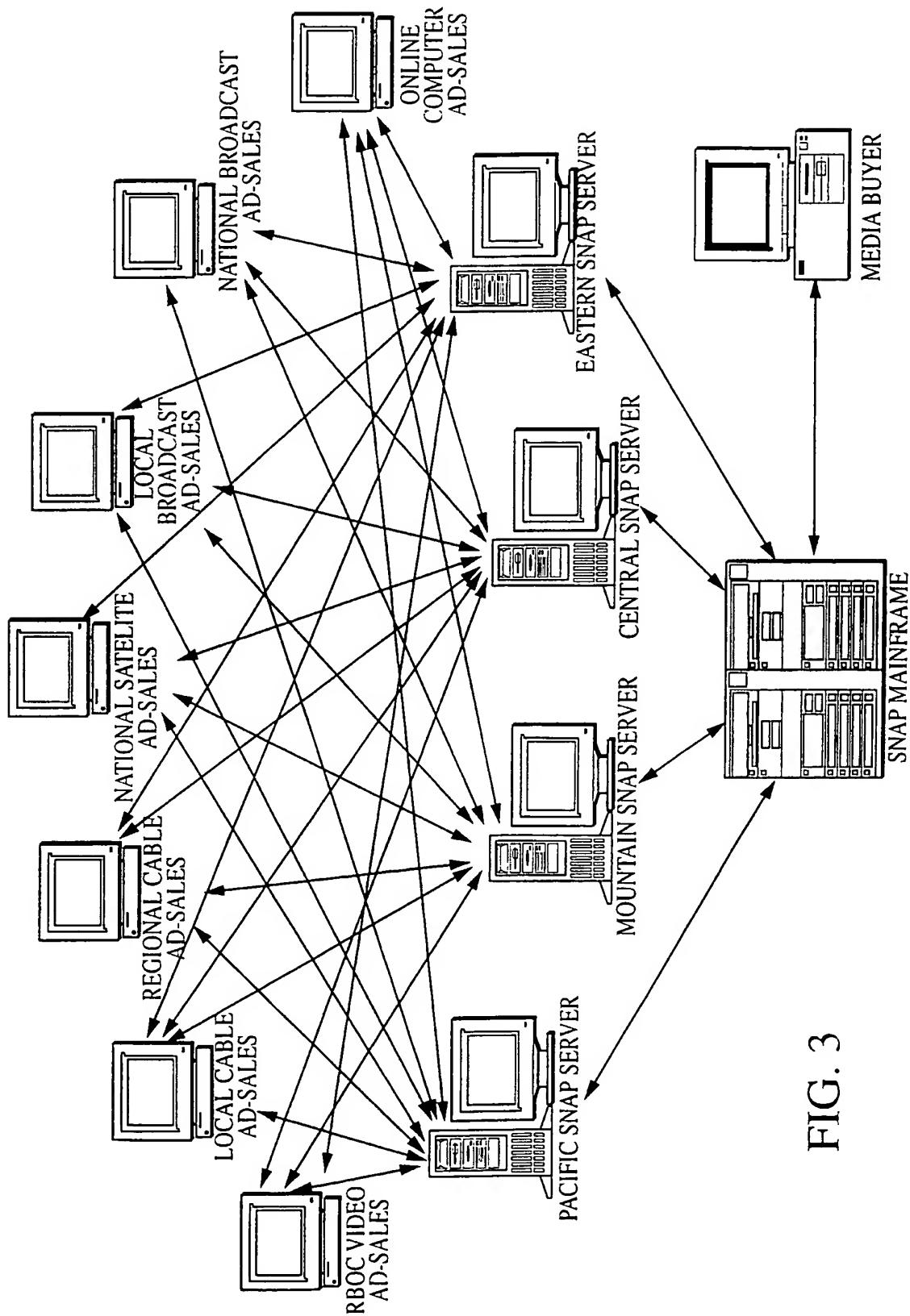


FIG. 3

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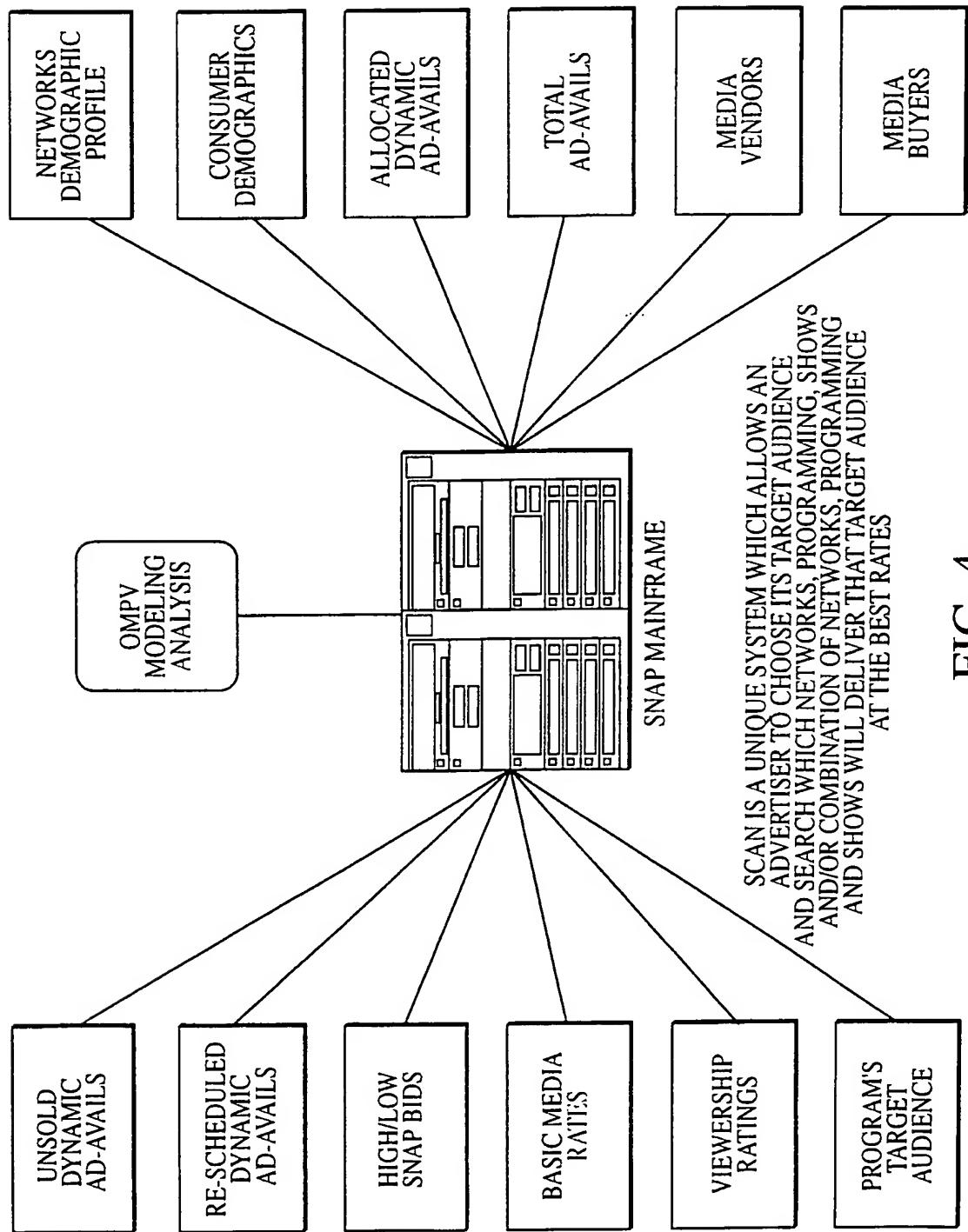
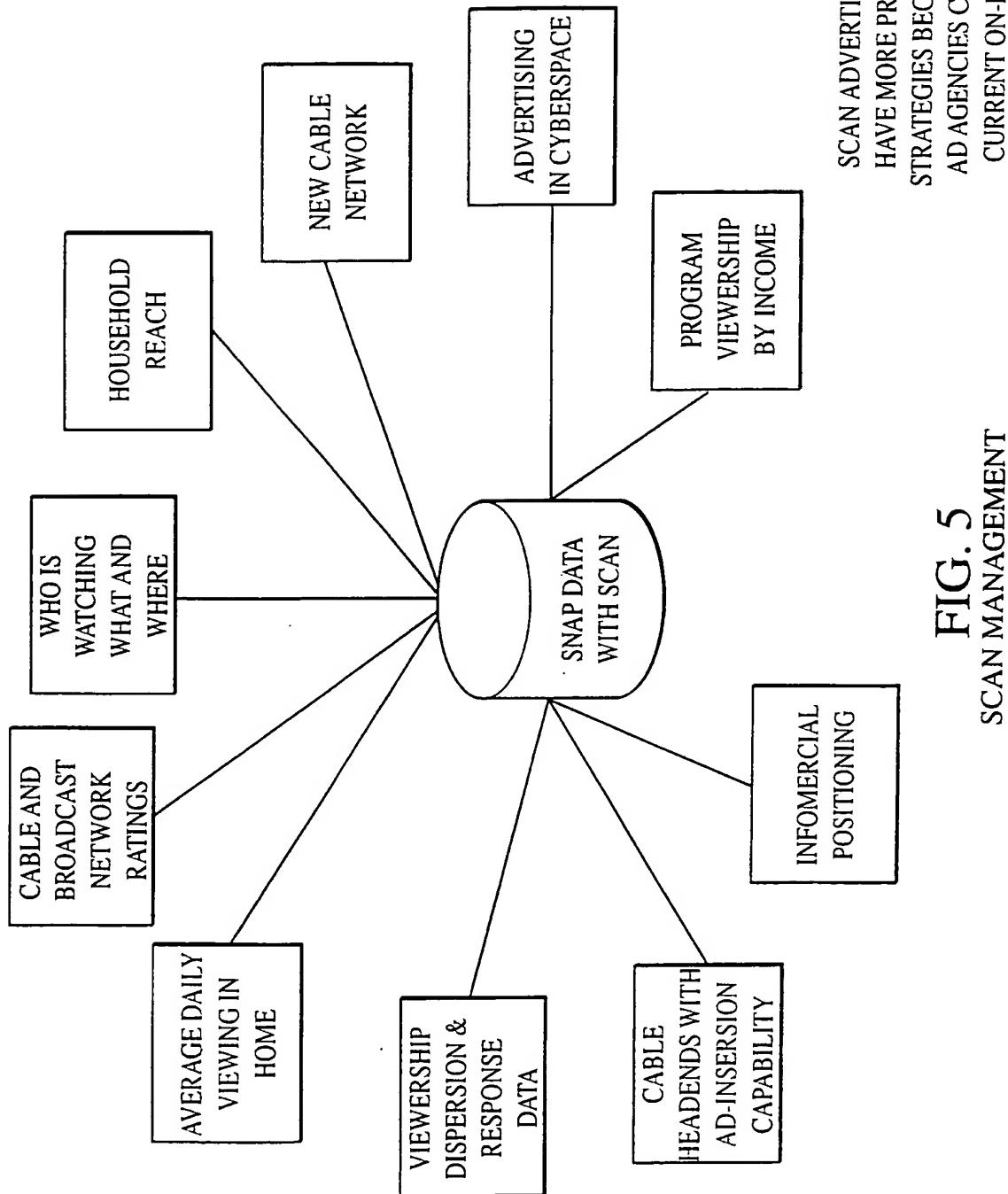


FIG. 4

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**FIG. 5**  
SCAN MANAGEMENT

MEDIA VENDOR MAKES UNSOLD ADS AVAILABLE  
TO SNAP MARKET AND COMMITS TO PROVIDING  
THE AD TIME TO SNAP MEDIA BUYERS

EXHIBIT D

SNAP - SCAN AD-AVAIL PLACEMENT SCHEDULE						
1STADFLIGHT	M	T	W	TH	F	M
SALES&SEARCH	M	T	W	TH	F	M
ADPLACEMENT	M	T	W	TH	F	M
ADSRUN	M	T	W	TH	F	M
2NDADFLIGHT	M	T	W	TH	F	M
SALES&SEARCH	M	T	W	TH	F	SCAN
ADPLACEMENT	M	T	W	TH	F	MENT
ADSRUN	M	T	W	TH	F	M

1STADFLIGHT	M	T	W	TH	F	M	1STADFLIGHT
SALES&SEARCH	M	T	W	TH	F	M	SALES&SEARCH
ADPLACEMENT	M	T	W	TH	F	M	ADPLACEMENT
ADSRUN	M	T	W	TH	F	M	ADSRUN

2NDADFLIGHT	M	T	W	TH	F	M	2NDADFLIGHT
SALES&SEARCH	M	T	W	TH	F	SCAN	SALES&SEARCH
ADPLACEMENT	M	T	W	TH	F	MENT	ADPLACEMENT
ADSRUN	M	T	W	TH	F	M	ADSRUN

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AVALS ARE ENTERED INTO THE  
SNAP SCAN SYSTEM AND ARE  
SET FOR PLACEMENT

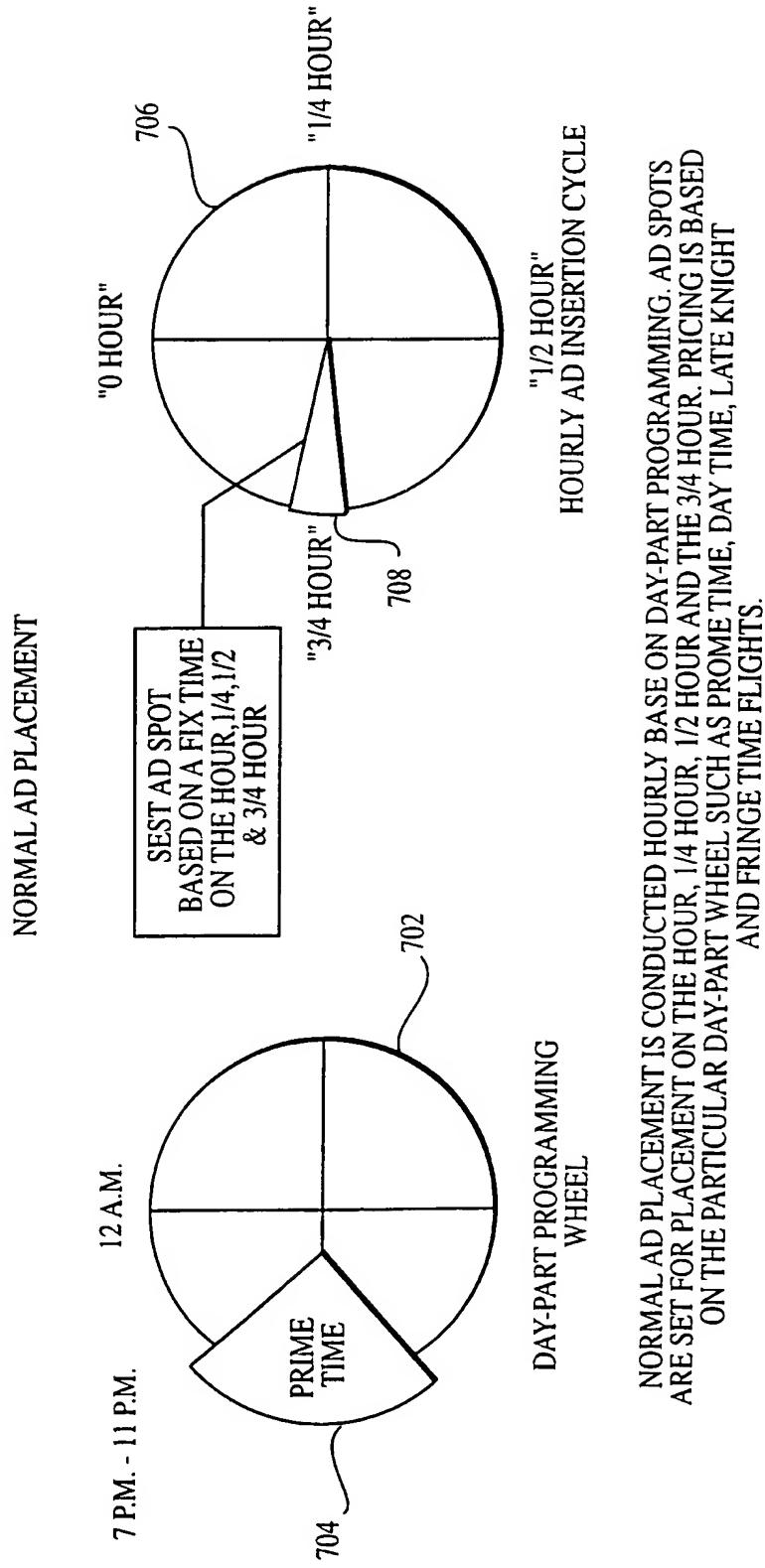
FIXED POSITION AND ROS ADS ARE RUN.  
AN AFFIDAVIT AND INVOICE ARE SENT  
TO THE SNAP MEDIA BUYER.

LEGEND:	
★	SCHEDULED
◇	ACTUAL
◆	CURRENT

SNAP MEDIA BUYERS PLACE ORDERS FOR TARGET  
AD DEMOGRAPHICS AND SCAN MATCHES THEIR  
REQUEST TO THE ADS MADE AVAILABLE BY SNAP  
VENDORS. BUYERS PLACE BIDS AND AVAIL IS  
AWARDED TO HIGHEST BIDDER AT END OF  
BID PERIOD (24HRS).

FIG. 6

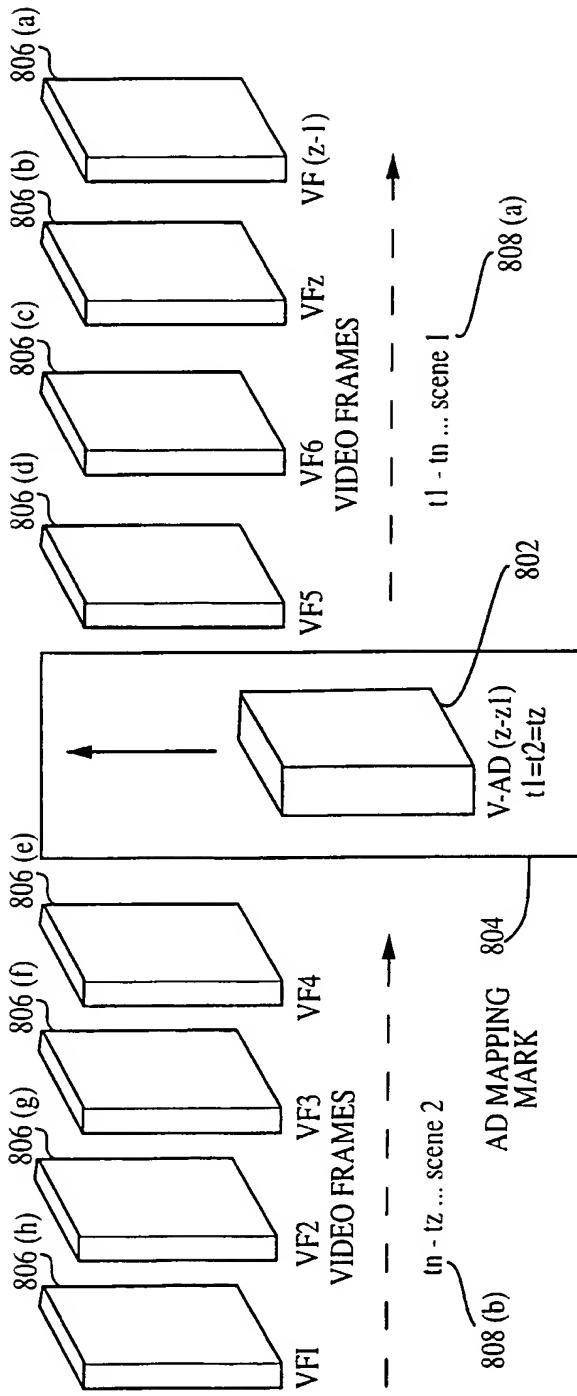
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NORMAL AD PLACEMENT IS CONDUCTED HOURLY BASE ON DAY-PART PROGRAMMING. AD SPOTS ARE SET FOR PLACEMENT ON THE HOUR, 1/4 HOUR, 1/2 HOUR AND THE 3/4 HOUR. PRICING IS BASED ON THE PARTICULAR DAY-PART WHEEL SUCH AS PROME TIME, DAY TIME, LATE KNIGHT AND FRINGE TIME FLIGHTS.

**FIG. 7**  
FIXED TIME BASED AD PLACEMENT

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SELECTED VIDEO PROGRAMMING CONTENT  
STREAMING VIDEO FRAMES TRANSMISSION

IN THE INTERACTIVE/VOD WORLD "DYNAMIC AD PLACEMENT" IS CONDUCTED BY PLACING AD-MAP MARKERS WITHIN THE VIDEO STREAM THAT FLAG SPECIFIC VIDEO ADVERTISEMENTS TO BE INSERTED BETWEEN DESIGNATED SCENES. SNAP DYNAMIC AD PLACEMENT SOFTWARE COORDINATES THE PLACEMENT OF THE AD IN THE RIGHT SPOT AS DESIGNATED BY THE MARKER WITHOUT CONCERN FOR DAY PART OR A SPECIFIC TIME ELEMENT. VIDEO STREAMS ARE PROCESSED WITH AD MAPPING SOFTWARE.

**FIG.8**  
DYNAMIC CONTENT BASED AD PLACEMENT

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 00/18421A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	US 5 974 398 A (HANSON BRUCE LOWELL ET AL) 26 October 1999 (1999-10-26) column 1, line 36 -column 2, line 9 column 5, line 3-60 claims 1-14 ---	1-20
Y	WO 97 12486 A (BOSTON TECH INC) 3 April 1997 (1997-04-03) abstract page 2, line 30 -page 4, line 29 page 6, line 3 -page 7, line 13 page 9, line 3 - line 13 page 12, line 1 - line 5 page 15, line 9 - line 33 page 17, line 33 -page 18, line 4 page 19, line 31 -page 20, line 2 claims 1-3,6-8,10,11 --- -/-	1-20

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## ° Special categories of cited documents :

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Date of the actual completion of the international search

Date of mailing of the international search report

10 October 2000

08/11/2000

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**INTERNATIONAL SEARCH REPORT**

International Application No.	
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**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WO 98 34189 A (FLYCAST COMMUNICATIONS CORP) 6 August 1998 (1998-08-06)</p> <p>abstract</p> <p>page 3, line 2 -page 4, line 21</p> <p>page 7, line 9 - line 23</p> <p>page 9, line 18 -page 10, line 13</p> <p>page 13, line 25 -page 14, line 3</p> <p>page 22, line 23 -page 24, line 1</p> <p>page 35, line 11 - line 15</p> <p>page 36, line 12 - line 19</p> <p>---</p>	1-20
A	<p>US 5 724 521 A (DEDRICK RICK) 3 March 1998 (1998-03-03)</p> <p>abstract</p> <p>column 1, line 61 -column 2, line 19</p> <p>column 4, line 3 -column 6, line 32</p> <p>column 14, line 8 - line 43</p> <p>claims 6,7,15</p> <p>---</p>	1-20
A	<p>KUMAR M ET AL: "Internet Auctions" PROCEEDINGS OF THE USENIX WORKSHOP OF ELECTRONIC COMMERCE, 31 August 1998 (1998-08-31), XP002130297</p> <p>abstract</p> <p>the whole document</p> <p>-----</p>	1,5-9, 14-18,20

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/US 00/18421

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			EP 0852880 A		15-07-1998
			JP 11512903 T		02-11-1999
			US 6006257 A		21-12-1999
WO 9834189	A	06-08-1998	AU 5819698 A		25-08-1998
			EP 1010115 A		21-06-2000
US 5724521	A	03-03-1998	NONE		

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